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MINERALOGY.—*Sincosite, a new mineral.* (Preliminary note.)[1] WALDEMAR T. SCHALLER, Geological Survey.

The name sincosite is given to a green hydrous calcium vanadyl phosphate, $CaO.V_2O_4.P_2O_5.5H_2O$, occurring in a black carbonaceous shale near Sincos, Peru. The mineral forms rectangular plates and is uniaxial negative. Some of the crystals are biaxial. Sincosite belongs to the uranite group of minerals (autunite, torbernite, carnotite, etc.) and illustrates the unexpected "equivalent valency" of quadrivalent vanadyl-vanadium with sexivalent uranic-uranium. Analysis of sincosite: CaO, 12.1 (calc. 12.33); V_2O_4, 36.3 (calc. 36.57); P_2O_5, 31.7 (calc. 31.28); H_2O, 19.9 (calc. 19.82); Insoluble, 0.3; total, 100.3. The full description of the mineral and a discussion of the relationships of all the minerals of the uranite group, will be published soon.

MINERALOGY.—*Cristobalite from the Columbia River Basalt of Spokane, Wash.*[2] EARL V. SHANNON, United States National Museum.

Recently while engaged in studying the minerals contained in gas cavities in the Columbia River Basalt from Spokane, Washington, the writer has identified the rare mineral cristobalite in a number of specimens. Although all of the minerals of these specimens will be described in detail in the final paper, to be published in the *Proceedings* of the U. S. National Museum, it is desired here to call attention to this new occurrence of this rare mineral and to outline, briefly, the mineralogic features of the locality as indicated by the work thus far completed. The specimens were donated as a carefully selected series to the Museum by Mr. Henry Fair of Spokane, to whom grateful acknowledgment is here tendered.

The rock containing the minerals is the ordinary monotonous basalt of the vast Columbia River lava plateau and came from various street and railway excavations in the City of Spokane. The rock

[1] Received January 20, 1922.

[2] Published by permission of the Secretary of the Smithsonian Institution.

contains scattered cavities varying up to several inches in diameter, the first lining of which consists of small blade-like crystals of a plagioclase identified by its optical properties as oligoclase-andesine. Upon this crust rest the disseminated white crystals of cristobalite and minute octahedrons of magnetite following which was deposited siderite ("sphaerosiderite") in small spherical masses. Later successive deposits include, in the order named, pyrite, iron opal, second generation sphaerosiderite, calcite, white opal, and hyalite. Weathering has converted some of the nodules of siderite to secondary pseudomorphs of limonite and goethite.

The cristobalite forms sub-translucent white crystals 0.5 mm. or less in diameter irregularly scattered over the interior of the cavities. These have a feeble luster and a white porcelain-like appearance. It was possible to detach several of the cristobalites from the matrix and to measure them on the 2-circle goniometer with sufficient accuracy to identify the forms and to indicate isometric symmetry. Most of the crystals are cuboctahedrons with the faces of the cube and octahedron equally developed. The faces are commonly concave or divided by sutures so as to give several signals while the cube faces often show a confusion of slightly re-entrant angles suggesting complex twinning and grading toward the spherulitic forms characteristic of the mineral. Rarely a crystal is observed which shows no indication of this twinning and which has the exterior form of a simple isometric crystal. The best of these measured was a cuboctahedron with its edges beveled by narrow faces of the trapezohedron. The latter form has not previously been observed on crystals of this mineral.

Under the microscope the material has a feeble birefringence and has a refractive index of $1.485 \pm .003$. The crystals are unchanged by boiling in hydrochloric acid and are volatilized without leaving any residue by evaporation with hydrofluoric and sulphuric acids. Although cristobalite has recently been described from several localities in the United States this is the first locality in this country to furnish measurable crystals of this mineral.

CRYSTALLOGRAPHY.—*Review of the optical-crystallographic properties of calcium oxalate monohydrate.*[1] EDGAR T. WHERRY, Bureau of Chemistry.

The mineral whewellite, calcium oxalate monohydrate, was discovered in 1840, and has subsequently been the subject of considerable

[1] Received Dec. 3, 1921.

crystallographic and optical investigation. The literature contains, however, contradictory statements as to its optical properties. Definite data upon these properties being desired for use in the study of this compound as it occurs in plant tissues, the various papers have been critically reviewed. Crystalline fragments have also been studied by the immersion method, and the final conclusions as to the optical-crystallographic properties of the substance are here presented.

CRYSTALLOGRAPHY

Calcium oxalate monohydrate crystallizes in the holohedral class of the monoclinic system; its axial ratio a:b:c and axial angle β have been determined as follows.

Authority	Date	a	b	c	β
Miller[2]	1840	0.8696	1	1.3695	72° 42′
Becke[3]	1907	0.8628	1	1.3677	73 00
Ungemach[4]	1909	0.8620	1	1.3666	73 02
Kolbeck, Goldschmidt & Schröder[5]	1918	0.8696	1	1.3695	72 42

The elaborate study of the mineral made by the last three authors appears to have definitely established the correctness of the Miller axial values.

The crystals are usually highly modified, but on the whole the base, the clinopinacoid and the unit prism are the dominant forms. A wide variety of habits has been noted. See figure 1. The most frequent appears to be prismatic, elongated on axis c, but elongation in the directions of axis a, axis b, and the zones of the pyramids (112) and (121) have also been observed. Tabular habits on the base, the clinopinacoid, and the dome (101) occur as well. Twinning is frequent on the negative unit orthodome (101). At all of its seven known localities the mineral is stated to be associated with some carbonate mineral, calcite, siderite, dolomite or ankerite, so that these habits represent the result of crystallization in an alkaline environment.

OPTICAL PROPERTIES

The values of the refractive indices for D light, α, β, γ, and optic axial angle 2 E given by different authors are tabulated here.

[2] Phil. Mag. (3) **16:** 450. 1840.
[3] Min. petr. Mitth. **26:** 391. 1907.
[4] Bull. soc. franc. min. **32:** 20. 1909.
[5] Beitr. Kryst. Min. **1:** 199. 1918.

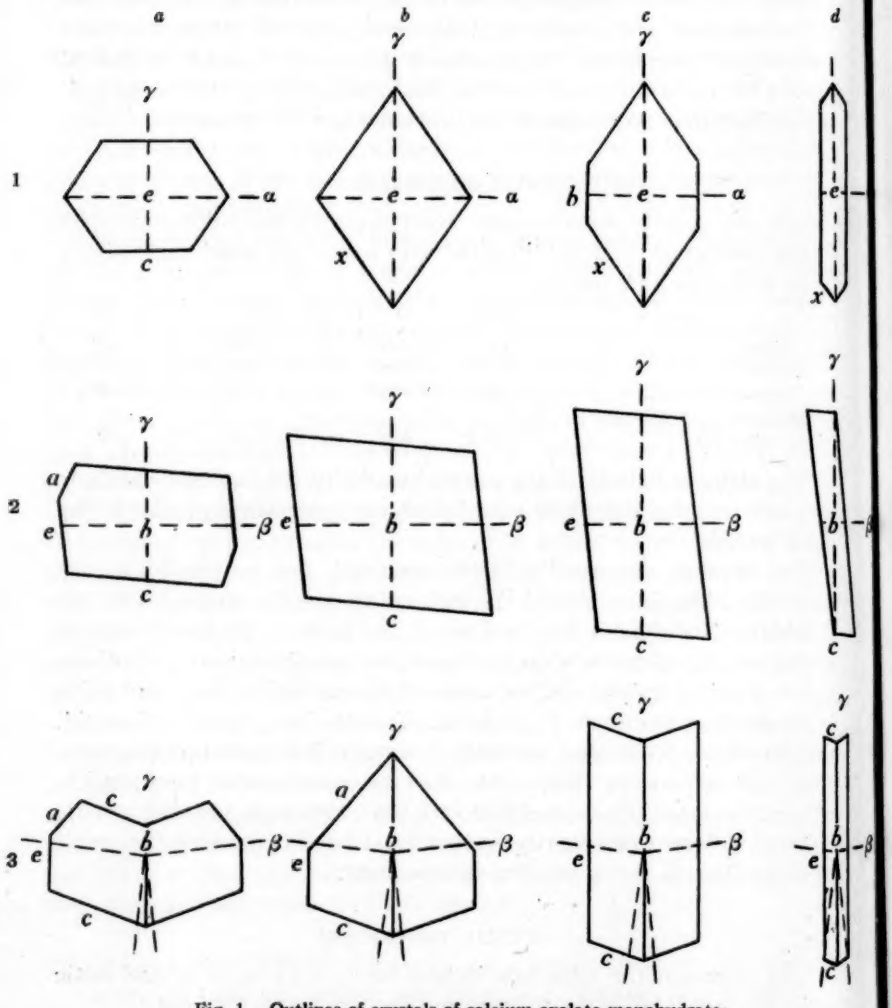

Fig. 1. Outlines of crystals of calcium oxalate monohydrate.

Authority	Date	α	β	γ	$\gamma-\alpha$	2 E
Schubert[6]	1899	...	1.549	...	...	89°
Becke[7]	1907	1.490	1.555	1.650	0.160	84° 40′
Ježek[8]	1908	1.490	1.555	1.649	0.159	83° 42′
Ježek[9]	1911	1.491	1.555	1.650	0.159	83° 55′
Average		1.490	1.555	1.650	0.160	84°

The values given by Becke and by Jezek agree within the limits of error of measurement, and the rounded average in the last line may be accepted as characteristic of the substance. Examination by the immersion method confirmed them completely. The material breaks into angular fragments without definite crystallographic orientation, so that values intermediate between the several indices are usually obtained, but the indices as given appear with sufficient frequency to show their correctness. The value of 2 E, as calculated from 2 V, is so high as not to be measurable under the microscope, but partial figures are often seen in the fragments studied by the immersion method, and on them the optical sign can be determined as positive, by the use of the selenite plate.

The greatest discrepancies in the literature upon whewellite concern the optical orientation, the following different descriptions of which are given:

Authority	Date	Position of axial plane	Position of acute bisectrix
Becke[10]	1907	Perpendicular to (010)	In obtuse angle β 29° from axis *c*.
Ježek[10]	1908	"	...
Winchell[11]	1909	"	$-11\frac{1}{2}$° from axis *c*.
Groth[12]	1910	Parallel to (010)	In acute angle β 64° from axis *c*.
Jažek[10]	1911	Perpendicular to (010)	In obtuse angle β 30° from axis *c*.

Study, by the immersion method, of a number of samples, representing fragments of the mineral whewellite, crystals in the tissues of various plants, and crystalline precipitates prepared by boiling together dilute solutions of the constituent ions, has indicated that the data of Becke and Jezek are correct. In accordance with this interpretation of the orientation, the following features correspond to the more frequent habits:

[6] Min. petr. Mitth. **18:** 251. 1899.
[7] *Loc. cit.*
[8] Bull. int. Acad. Sci. Bohemia **13:** 1; **22:** 1. 1908; through Z. Kryst. Min. **46:** 610. 1909.
[9] Rozpr. Ceske Akad. II, **20:** 1. 1911; through Z. Kryst. Min. **54:** 191. 1914.
[10] *Loc. cit.*
[11] *Elements of optical mineralogy*, . 391, 1919.
[12] Chemische Krystallographie **3:** 152. 1910.

Refractive indices Lengthwise		Crosswise			Sign of elongation	Extinction angles	Twinning plane may show	Inferred habit—elongated on
α 1.490	β 1.555	γ 1.650	..	0°	Lengthwise	axis *b*
β 1.555	α 1.490	γ 1.650	±	0–13°	Crosswise or lengthwise	axis *a*
γ 1.650	α 1.490	β 1.555	+	0–30°	Diagonally	axis *c*
γ 1.650	α 1.490	β 1.555	+	0–6½°	Lengthwise	zone of *e* : *b*

These data are being applied to the study of the crystals of calcium oxalate occurring in official crude drugs and other plants, a report on which will appear elsewhere.

BOTANY.—*Two new species of* Acanthospermum *from the Galapagos Islands.*[1] S. F. BLAKE, Bureau of Plant Industry.

Several months ago I published[2] a revision of the genus *Acanthospermum*, a small group of *Asteraceae* closely related to *Melampodium*, from which it is distinguished technically by the presence of spines or hooked prickles on the indurated phyllaries which envelop the ray achenes. Of the eight species there described the most aberrant is *Acanthospermum lecocarpoides* Robins. & Greenm., the sole member of the Section *Lecocarpopsis*, which is distinguished from the two other sections of the genus by its pinnatifid leaves, plump trigonous-turbinate fruit bearing spines only around the broadly rounded apex, and comparatively large rays.[3] The species, seen by me only in two collections from Hood Island, Galapagos Archipelago, is remarkable for its rather close resemblance in every feature but the fruit to the monotypic genus *Lecocarpus* Decaisne, which is confined to Chatham and Charles Islands of the same group.

After the paper above referred to had been turned in for publication, I found at the Gray Herbarium two sheets of *Acanthospermum*, collected by Alban Stewart on Chatham and Gardner-near-Hood Islands, which appeared to represent two new species of the Section *Lecocarpopsis*. Through the kindness of Miss Alice Eastwood, I was able to supplement these two sheets by the extensive series of mounted and unmounted duplicates of the same two numbers in the herbarium of the California Academy of Sciences. Study of this material, amounting in all to 42 sheets, shows that it unquestionably represents two new forms of the Section *Lecocarpopsis*. Since these

[1] Received March 5, 1922.

[2] Contr. U. S. Nat. Herb. **20:** 383–392, *pl. 23*. 1921.

[3] The extreme corky-woody thickening of the fruiting phyllaries at maturity is also characteristic of this section of the genus.

forms, although closely related, are not connected by intermediates, they are here treated as species.

Since the days of Darwin's voyage on the Beagle, the Galapagos Archipelago has been a classical region for the study of the evolution of closely allied forms of both plants and animals. The three species of *Acanthospermum* here discussed make an interesting addition to the list of plant groups represented on different islands by distinguishable forms so closely related that their origin from a common ancestor, and presumably at no great distance in the past, is incontestable. The abundant material representing two of these forms, moreover, affords a basis for a greater degree of assurance as regards their probable distinctness than has often been the case previously.

As already mentioned, *Acanthospermum* is closely allied to *Melampodium*. *Melampodium* is an American genus of about 43 species ranging from Kansas to Brazil, and represented by one introduced species in the Philippine Islands, but not known from the Galapagos Islands. *Acanthospermum* includes, with the two species here described, ten species, native in the West Indies, South America, and the Galapagos Islands, and introduced in North and Central America and in the Old World. In both genera only the ray flowers are fertile, and each achene is closely enveloped and hidden by the corresponding subtending phyllary. The compound structures, called "fruits" for the sake of brevity, are armed in *Acanthospermum* with several or many spines or hooked prickles. In *Melampodium* the achene-enclosing phyllaries are smooth or merely tuberculate, and are in one section developed at apex into a cup or hood which may be prolonged into a single short or long often recurved horn on the apical outer margin.

The most remarkable character of the three species of *Acanthospermum* here considered is the variability in the armament of the fruits, a feature quite without parallel in the other species of the genus. In this respect *A. leptolobum* is by far the most variable. Although this species happens to be represented by far more material than the others (34 sheets, as opposed to 8 of *A. brachyceratum* and 2 of *A. lecocarpoides*), this cannot be considered the explanation of the variability, since the extremes represented in figure 1, *d-j*, are sometimes found in a single head. Especially noteworthy is the type of fruit represented in figure 1, *j*. Technically this fruit by itself would be referred to *Melampodium*. The absence of spines in this type of fruit seems to be due to a loss of vigor or nourishment, as indicated by the comparatively small size, and not to infertility, for the seed is quite

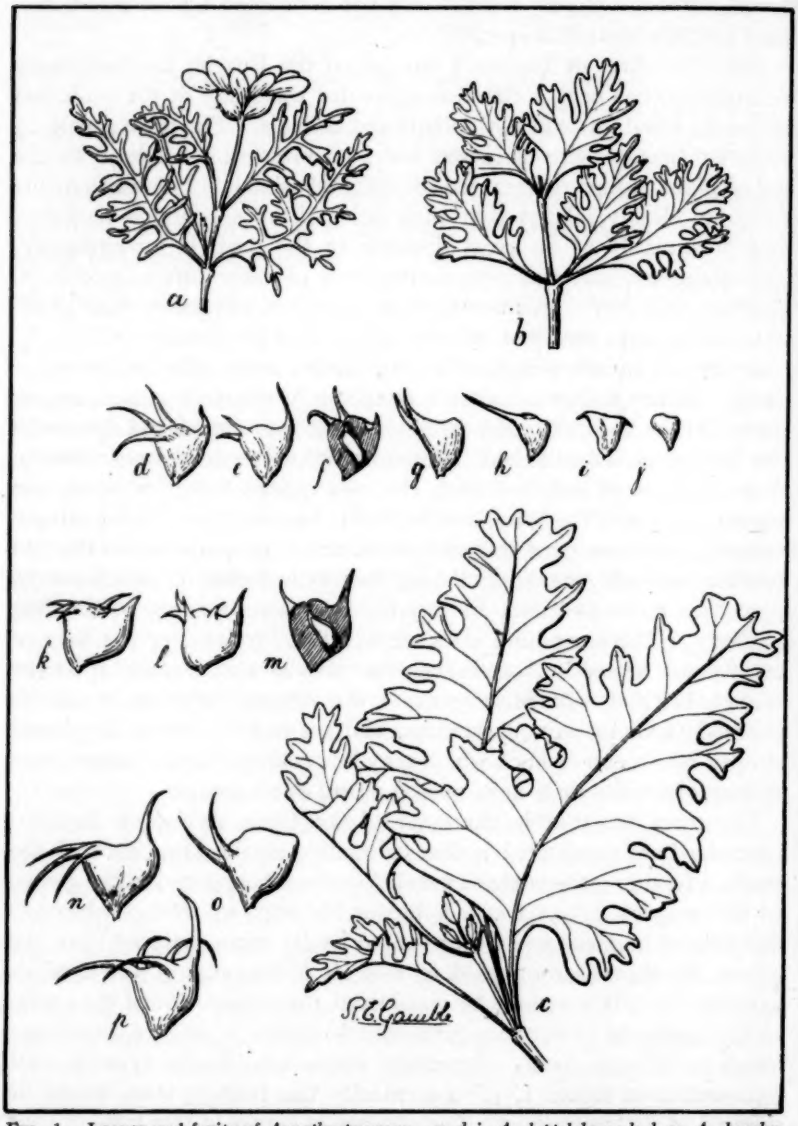

FIG. 1. Leaves and fruits of *Acanthospermum*.—*a*, *d-j*, *A. leptolobum*; *b*, *k-m*, *A. brachyceratum*; *c*, *n-p*, *A. lecocarpoides*. *a-c*, × 1; *d-p*, × about 2. All drawn from the types or specimens of the type collections. The ventral side of the fruits faces left in each case.

as well developed in such fruits as in normal ones. One is tempted to explain the variability of these three forms of *Acanthospermum* by the supposition of a very recent origin. The suggestion may also be made that the absence in the Archipelago of native mammals whose fur would provide a means of transport for the spiny fruits may be in some way correlated with the tendency to loss of spines. This tendency toward abortion of spines in the fruits of various unrelated genera of plants of the Galapagos Islands has already been mentioned by Robinson,[4] and considered explicable by the paucity of indigenous mammals.

The three species of the Section *Lecocarpopsis* may be separated by the following key.

Leaves usually divided about half way to midrib, the rachis 4 to 20 mm. wide; body of fruit 4 to 5 mm. deep; horns usually subequal, or the outer longer or rarely obsolete.

Leaf blades 4.5 to 9 cm. long, 2.2 to 4.5 cm. wide; peduncles 2.3 to 4.5 cm. long; horns of fruit 3 to 7 mm. long, usually subequal; Hood Island. *A. lecocarpoides.*

Leaf blades 1.5 to 2.5 cm. long, 1.7 to 2 cm. wide; peduncles about 1 cm. long; horns of fruit 1 to 3 mm. long, the outermost the longest; Gardner-near-Hood Island. *A. brachyceratum.*

Leaves divided nearly to the midrib, the rachis only 1 to 2 mm. wide; body of fruit 2.2 to 3.5 mm. deep; inner horns of fruit usually much longer than the outer; Chatham Island. *A. leptolobum.*

Acanthospermum brachyceratum Blake, sp. nov. Figure 1, *b*, *k-m*.

Base not seen; stem indurated, 60 cm. high, dichotomous, densely spreading-hispidulous; leaves opposite, hispidulous and gland-dotted above and chiefly on the nerves beneath; petioles 8 to 12 mm. long, connate at base, narrowly margined; blades oval-ovate, 1.5 to 2.5 cm. long, 1.7 to 2 cm. wide, obtuse, cuneate at base, lobed about to middle, the lobes 5 to 7 pairs, cuneate or oblong, revolute-margined, and toward apex 2 to 5-lobed with short obtuse densely hispidulous lobes; peduncles solitary, terminal, densely sordid-hispidulous, about 1 cm. long; heads 1.5 cm. wide; phyllaries 4, deltoid-ovate, obtuse, entire, hispidulous, 6 mm. long, 5 mm. wide; rays about 8, yellow, oval, tridenticulate, the lamina joined in a ring at base without proper tube, hispidulous and stipitate-glandular dorsally, 5.5 mm. long, 2.8 mm. wide; disk corollas numerous, yellow, the slender tube 1 mm. long, glandular, the campanulate throat 0.8 mm. long, the triangular acute recurved teeth 1 mm. long; pales acuminate, lanceolate, dentate at apex, stipitate-glandular above, about 3 mm. long; fruit turbinate, slightly compressed laterally, densely stipitate-glandular throughout and somewhat hispidulous, the body 4.5 to 5.5 mm. high, 4 to 4.5 mm. deep, bearing around the rounded apex 5 to 7 subulate horns usually grooved on the inner side, the 2 to 4 inner ones shorter, spreading or slightly ascending, 1 to 2 mm. long, the outermost one erect, with broadened base, 2 to 3 mm. high, the one or two lateral ones similar to the shorter inner ones.

Type in the Gray Herbarium, collected on Gardner-near-Hood Island, Galapagos Islands, September 28, 1905, by Alban Stewart (no. 701). Dupli-

[4] B. L. ROBINSON. *Flora of the Galapagos Islands.* Proc. Amer. Acad. 38: 238. 1902.

cates in the herbarium of the California Academy of Sciences and the U. S. National Herbarium.

Gardner-near-Hood Island, on which this species is found, is a tiny islet only 2 km. or less from Hood Island, the locality of *A. lecocarpoides* Robins. & Greenm. The two forms are very closely related, but *A. brachyceratum* may be distinguished by its much smaller, more finely lobed leaves, its shorter peduncles, and its shorter-spined fruit. It is described by the collector[5] as a common bush two feet high.

Acanthospermum leptolobum Blake, sp. nov. Figure 1, *a*, *d-j*.

Annual, dichotomous, about 1 m. high, the stem and branches slender, woody, grayish, densely tuberculate-hispidulous; leaves opposite, rather densely hispidulous on both sides; petioles about 8 mm. long, connate at base, narrowly margined, about 1 mm. wide; blades ovate, 2.5 to 4 cm. long, 1.3 to 4 cm. wide, pinnatifid nearly to midrib, the leaf rachis 1 to 2 mm. wide, the lobes about 5 pairs, mostly opposite, irregularly 2 to 8-lobed with linear obtuse segments or the uppermost entire, the segments again sometimes toothed; peduncles terminal, solitary, densely spreading-hispidulous with subglandular hairs, 1.3 to 2.5 cm. long; heads about 3 cm. wide; phyllaries 4, ovate, obtuse or acute, usually serrulate, hispidulous chiefly beneath, 8 to 10 mm. long, 4.5 to 6 mm. wide; rays 10, yellow, oval, tridenticulate, merely closed in a ring at base without proper tube, about 9-nerved, stipitate-glandular dorsally, 10 mm. long, 4.5 mm. wide; disk corollas numerous, yellow, the slender tube sparsely glandular, 1.5 mm. long, the campanulate throat 1 mm. long, the five recurved triangular teeth 1 mm. long; stamens cordate-sagittate at base; pales acuminate, lacerate-dentate above, stipitate-glandular, about 3 mm. long; fruit compressed-turbinate, densely stipitate-glandular and more or less hispidulous, whitish at maturity, the body 2.8 to 3.5 mm. high, 2.2 to 3.5 mm. deep at apex, bearing at apex 1 to 5 horns, the 1 to 3 inner subulate or lance-subulate, 1 to 4 mm. long, divergent-spreading, when large excavated at the base, or sometimes wanting, the 1 to 3 outer triangular to subulate, erect or curved-ascending, 1 to 4 mm. high, at least the central one excavated at base, the latter sometimes represented only by its deeply excavated base and without free portion, or all the horns entirely wanting.

Type in the Gray Herbarium, collected in woodland at Sappho Cove, Chatham Island, Galapagos Islands, altitude 240 meters, February 10, 1906, by Alban Stewart (no. 700). Duplicates in the herbarium of the California Academy of Sciences and the U. S. National Herbarium.

Chatham Island, on which this species occurs, is about 50 km. from Hood Island. Its representative of *Acanthospermum*, *A. leptolobum*, is so different from that of Hood Island that its specific distinctness is likely to be confirmed by future collecting, while the form found on Gardner-near-Hood Island, *A. brachyceratum*, is so much closer to *A. lecocarpoides* that it may prove to be only a variety. Stewart[6] describes his no. 700 as a common bush, 3 to 4 ft. high, in woodland at 800 ft., and says: "Except for the presence of spines on the achenes [fruits] the specimens from this island are more like *Lecocarpus*

[5] A. STEWART. *Botanical survey of the Galapagos Islands.* Proc. Calif. Acad. IV. 1: 148. 1911.

[6] Loc. cit.

foliosus than an *Acanthospermum*." I have not been able to verify his statement that some of the material from Gardner-near-Hood Island (*A. brachyceratum*) has "some of the leaves deeply cut, as do the specimens from Chatham Island."

In this species the slender stem is so woody that I was inclined to consider it frutescent, until a specimen was found among the unmounted material collected by Stewart which showed clearly that the plant was an annual.

In conclusion, it may be well to mention that the data for the specimens collected by Mr. Stewart on the 1905–06 Galapagos Expedition of the California Academy are in an unfortunate state of confusion. The 33 unmounted sheets of *A. leptolobum*, for example, are not accompanied by data, but they are so clearly identical in every feature with his no. 700 as represented in the Gray Herbarium and the herbarium of the California Academy of Sciences that I have no hesitation in considering them a portion of the same collection.

BOTANY.—*A perennial species of teosinte.*[1] A. S. HITCHCOCK, Bureau of Plant Industry.

In a recent article[2] entitled *Teosinte in Mexico*, Mr. G. N. Collins reviews our knowledge concerning teosinte in Mexico. Up to the present all the forms of teosinte have been referred to one species, *Euchlaena mexicana* Schrad. There are two forms of this, both annual, one from Durango, where it was collected by Dr. Edward Palmer, and one grown in Florida, the origin of which is uncertain. The latter form has been grown in France and may have come originally from Guatemala. At present the only known localities for the annual teosinte in the wild state are Durango and the State of Mexico near Chalco, where it was recently collected by Collins. The origin of the specimens described by European botanists is unkown.

The botanical history of the annual species is as follows:

Euchlaena mexicana Schrad. Ind. Sem. Hort. Goettingen. 1832; reprinted in Linnaea **8**: Litt. 25. 1833. I have not seen the original publication, an ephemeral seed list, but fortunately the reprint is accessible. Schrader describes the genus and species together, "*Euchlaena mexicana* Schrad. Nov. Gen. e Graminearum Olyrearum tribu," and so on. He describes the staminate spikelets as 1-flowered instead of 2-flowered and the genus is placed with the *Olyra* group. As to locality he says, "Mexico, Dr. Mühlenfordt." Nothing further concerning the history of this is known.

Reana giovanninii Brign. Ind. Sem. Hort. Mutin. 1849. The publication cited is also an ephemeral seed list which I saw at the Botanical Garden of

[1] Received March 20, 1922.

[2] Journ. Hered. **12**: 339. 1922.

Padua, Italy. Because of the rarity of the original publication the description is here reproduced.

Reana
Genus Novum
(Gramineae)
(Zeinae)

Flores monoici. *Masculi* terminales paniculati: spica biflora, flora altero sessili, altero pedicellato: staminibus sex. *Feminei* axillares, spicati, erecti, sessiles in axi flexuoso: bracteis imbricatis ad medium usque involuti: stylis longissimis, exertis, pendulis: parte spicae superiore, abortiva, exserta, erecta. *Cariopsis* curvo-trigona axe arcte adhaerens.

Reana Giovanninii foliis amplexicaulibus, canaliculatis, angustis, integerrimis, longissimis. Habitat in Mexico-Annua-Attulit ex loco natali D. Doct. Melchior Giovannini, Regiensis.

The description is quoted soon after in two botanical periodicals (Ann. Sci. Nat. III. Bot. **12:** 365. 1849; Flora n. ser. **8:** 400. 1850).

Reana luxurians Dureiu, Bull. Soc. Acclim. II, **9:** 581. 1872. The author in speaking before the society mentions a grass called Teosinte which he thinks is probably the name of a country. The seed probably came from Guatemala. He speaks well of it as a forage plant and ventures to call it *Reana luxurians*. The name is not technically published here as there is no description.

Euchlaena bourgaei Fourn. Bull. Soc. Bot. Belg. **15:** 468. 1876. In this article Fournier reviews the synonymy and describes the genus more fully than his predecessors. He describes three species, *E. mexicana*, *E. bourgaei*, and *E. giovanninii*, the second being new. He distinguishes the last species on description only, saying that he has seen no specimen with leaves as described. His new species is described as being 2 feet tall, annual, and the staminate inflorescence as consisting of a single terminal spike. The locality is given as "In collibus prope Chiquihuite (Bourg. absque numero), octobri." He gives the locality for his specimen of *E. mexicana* as "In arena fluvii exsiccati prope mare Pacificum, San Agostin, octobri (Liebm. n. 548)."

Euchlaena luxurians Dur. & Aschers. Sitz.-Ber. Ges. Nat. Freunde Berlin (session of Dec. 19, 1876); Bull. Soc. Linn. Paris **1:** 107 (session of Jan. 8, 1877). These two articles appeared about the same time and covered about the same ground. In a preceding article (*Ueber* Euchlaena mexicana Schrad. Verh. Bot. Ver. Brandenburg **17:** 76. March 3, 1876) Ascherson discusses the relation of *Euchlaena* to *Tripsacum*. He states here that the plants of *E. mexicana* were cultivated in the Berlin garden a few years and then disappeared. In the herbarium was a specimen from the garden and one deposited by Nees. Ascherson states further that there is no specimen in the herbarium at Göttingen to interpret Schrader's description. In the Trinius Herbarium at the Academy of Sciences, Petrograd, the present writer saw a fragment of "*Euchlaena mexicana* Schrad. e Hort. Goett."

In the first two articles mentioned Ascherson discusses at some length the history of the genus *Euchlaena*. He is familiar with *E. mexicana* as grown at the Berlin botanic garden. Previously the genus had been placed

near *Olyra* but he thinks it stands near *Zea* (Indian corn), in fact, that it resembles closely a stunted plant of maize. He points out that the staminate spikelets are 2-flowered instead of 1-flowered as described by Schrader; describes fully the female or pistillate spikelets and discusses the relation to *Tripsacum* and *Zea*, stating that *Euchlaena* is a *Zea* in which the female inflorescence is nearly as in *Tripsacum;* and quotes Grisbach (Veg. Erde 1: 542) as doubting the American origin of corn because of its affinity with certain Asiatic genera such as *Coix*, but Ascherson himself thinks *Zea* is much more closely related to *Tripsacum*, an American genus. Ascherson discusses *Reana luxurians* and takes occasion to transfer it to *Euchlaena*, of which genus he considers it a second species differing in its greater size. There are as many as 150 culms to one plant, these being as much as $2^1/_2$ meters tall. In the only staminate spikelet of *E. mexicana* he has seen the lemmas are shorter than the glumes while in *E. luxurians* they are as long as the glumes. The joints of the pistillate inflorescence are cylindrical and obliquely truncated at the ends instead of being triangular as in *E. mexicana*. This is the same difference distinguishing the Florida form of the cultivated teosinte from the Durango form as pointed out by Mr. Collins.

In 1910 I collected in Mexico, near Zapotlán, now called Ciudad Guzman, a perennial species of *Euchlaena*, and Mr. G. N. Collins collected it at the same place in October, 1921, while searching for teosintes in their native habitat. This species differs distinctly from all previously known forms of teosinte in the possession of rhizomes and is described below as new.

Euchlaena perennis Hitchc., sp. nov.

Plants perennial, producing strong scaly rhizomes; culms erect or somewhat geniculate at base, firm, glabrous, 1 to 2 meters tall; sheaths striate, the striae joined by numerous cross-veins, glabrous or some of them, especially the upper or those of the branches, somewhat hispid in the region of the collar and throat, the lower longer than the internodes, the upper shorter; ligule a short somewhat lacerate membrane, 1 to 2 mm. long; blades linear or linear-lanceolate, as much as 40 cm. long and 3 cm. wide, the upper shorter, somewhat cordate-clasping at base, acuminate, flat and rather thin, the white midnerve prominent beneath, glabrous, strongly scabrous or scabrous-ciliate on the margin, ciliate near the base; terminal inflorescence staminate, consisting of 2 to 5 approximate, ascending or spreading racemes 6 to 12 cm. long, the internodes between the lower ones about 1 cm.; spikelets in pairs, the pairs alternately to right and left on one side of a flat-triangular rachis, the rachis internodes 5 to 8 mm. long, scaberulous or ciliate on the angles; spikelets 2-flowered, 8 to 9 mm. long, elliptic or somewhat broader above, the middle one of the pair nearly sessile, the other on an angular scaberulous pedicel 3 to 4 mm. long, enlarged toward apex; first glume flat on the back, strongly inflexed at the margins, smooth except the scaberulous-ciliate keels, these somewhat winged above, slightly notched at apex. the midnerve rather faint, the strong lateral nerves at the inflexed margins, a second faint pair intermediate;

second glume a little shorter than the first, glabrous, convex on the back, loosely inflexed at the margins, thinner than the first, 5-nerved; lemmas and paleas all hyaline, the first lemma faintly 5-nerved, this and the 2-nerved palea about as long as the first glume; second lemma faintly 3-nerved, narrower and shorter than the palea, the latter nearly as long as the second lemma; pistillate inflorescences in the axils of the leaves, partly protruding from the sheaths, each wrapped in one or more sheathing bracts, consisting of a series of pistillate spikelets on an articulate axis, the spike being 3 to 6 cm. long and 4 to 5 mm. thick, in some cases bearing above a raceme of staminate spikelets as much as 10 cm. long; pistillate spikelets single, on opposite sides, sunken in cavities in the hardened joints of an obliquely articulate rachis; joints of the fruiting rachis trapezoidal, 6 to 8 mm. long, about 4 mm. thick the short side 2 to 3 mm. long; first glume indurate like the rachis joint, closing the cavity containing the remainder of the spikelet, apiculate, about as long as the joint, pilose in the sinus at base.

Type in the U. S. National Herbarium, no. 727077, collected in prairie along the railroad, about one mile south of the station, Zapotlán (Ciudad Guzman), Jalisco, Mexico, September 22, 1910, by A. S. Hitchcock (no. 7146). Also collected at the type locality October 28, 1921, by G. N. Collins and J. H. Kempton.

This species is distinguished by the rhizomes and scattered stems, the plants growing in colonies. The pistillate spikes appear to be usually single in the axils of the leaves.

ETHNOLOGY.—*Customs of the Chukchi natives of northeastern Siberia.*[1] H. U. SVERDRUP. (Communicated by Francis B. Silsbee.)

Captain Amundsen's Expedition left Norway in 1918 with the intention to follow the coast of Siberia eastward to the vicinity of Bering Strait, proceed thence towards the north, let the vessel, the "Maud," freeze in, and drift with the ice fields across the Polar Sea back to the Atlantic Ocean. The vessel was, however, forced by the ice conditions to winter three times in different places on the northern coast of Siberia, and was in 1921 compelled to go to Seattle for repairs.

In September, 1919, the Expedition was stopped by the ice at Ayon Island, about 700 miles west of Bering Strait. Natives of the Chukchi tribe, with herds of domesticated reindeer, were then living on the island, but they would leave the coast in a few weeks and move inland to the forests, where they are accustomed to spend the winters. This group of the Chukchi was apparently very primitive, and had very

[1] Abstract of an address delivered at a joint meeting of the Washington Academy of Science and the Anthropological Society, February 16, 1922; received for publication March 16, 1922. An extensive account, entitled "Blandt rentsjuktsjere og lamuter," has been published in ROALD AMUNDSEN'S *Nordostpassagen*. Gyldendalske boghandel. Christiania, 1921.

little communication with the civilized world. Captain Amundsen realized that a unique opportunity was here afforded of gathering information about this little known tribe, and he therefore suggested that I join the natives, accompany them to the interior, and return to the ship in the spring. Thus it came about that I spent seven and one-half months alone among the Chukchi. The existence of the natives among whom I stayed depends absolutely upon the domesticated reindeer, which in winter live in the sheltered forests, where reindeer moss is abundant under the soft snow, and in summer seek the grass-covered tundra, where mosquitoes and hornets are less troublesome. Hunting is unnecessary for the natives, because the reindeer give them practically all they need—tents, clothes and food. In addition, they need seal blubber for their lamps, and sealskin for strings and soles. These articles they obtain from the natives at the coast in exchange for deerskin and deer meat. Furthermore, they go every spring to the Russian settlements at the Kolyma River to the yearly fur market, where they exchange their furs, mostly foxes and squirrels, for tea, tobacco, matches, knives, cartridges, and so on.

The tents in which they live, summer and winter, are very well adapted both to their nomadic life and to the climatic conditions. Their most striking feature is that they are double, one being inside another. The outer tent is large and almost conical, with a cover of reindeer skin. But if such a tent in cold weather were to be heated to a comfortable temperature, it would require a great quantity of wood. The Chukchi spend, however, only three or four months of the cold season in the forests, where wood is abundant; the rest of the year they live on the barren tundra, where they find willows to furnish sufficient fuel for cooking, but not for heating. Inside the large tent, therefore, they place a smaller one, used for living and sleeping. This inner tent is made of heavy deerskin, and has the form of a square case hanging down to the ground. It is lighted and heated by a flat lamp of the Eskimo type, but most of the heat is produced by the many people who gather in the small space. The temperature may rise to 80° F., even on a day when a blizzard is raging and the temperature outdoors is −20° F., because the inner tent is protected from the wind by the outer one, and because the reindeer-skins of which it is made are highly insulating. But at night, when the natives are sleeping on the ground, covered with deerskins, the temperature is liable to fall. Accordingly, before going to sleep, the natives adjust all the sides of the inner tent so that no holes are left through which cold air might

enter. The natural consequence is, that in the morning the air inside is frightful beyond description.

The Chukchi dress in deerskin only; they use one suit with the hairy side in and one with the hairy side out. The clothing of the men does not differ essentially from the clothing of the Eskimos, but the women's dress is entirely different. The Chukchi women wear high and very wide deerskin boots, and what may be called a union dress reaching to the knees. Ornaments on the dress are almost unknown; the only way in which the deer Chukchi try to give their dresses a more attractive appearance is by using white-spotted deerskins and matching them so that the white spots appear symmetrical.

The reindeer supply practically all the natives' food. A few roots are dug up in the spring and eaten, and the boiled contents of the reindeer's paunch is regarded as delicious, but with these exceptions, the diet is a pure meat diet. The Chukchi obtain the necessary variety in their food by eating almost every part of deer, from the meat to the marrow.

Furthermore, the reindeer are the beasts of burden; they have to pull the clumsy sledges on which all the belongings of the natives are packed, when they move from one place to another. When they are moving or living in the same place, the task of the men is to attend to the sledges, to keep the reindeer herd together, and the wolves away. The latter is the task of the young men, who sometimes lead a strenuous life. Occasionally it happens that for weeks at a time they do not sleep under shelter, while in the same time the elder men do not leave the tents. As soon as a man has a son, who is old enough to take care of the reindeer, he himself quits. The highest ambition of a man is, therefore, to have a son, or at least a son-in-law.

The young men handle the lassos with wonderful skill, and have an astonishing knowledge of the deer. The average number of reindeer belonging to one household is about 400 or 500, and a young boy knows by sight not only his and his father's reindeer, but also all belonging to the neighbors, which may mean several thousands. Curiously enough, he is not able to tell how many he knows, because the highest figure a Chukchi is able to handle seems to be 200—20 times 10. The task of the women is to tan the deerskins, make new clothes, mend old ones, to cook, and to do do what may be called general housework. The same rule applies to the women as to the men, namely, that the younger have to do the work, the older may do what they like.

The language has one peculiarity worth mentioning; it is pronounced in a different way by men and women. If a man uses a hard sound like *r*, *t*, or *k*, the woman often, but not always, replaces this with a soft *z*. To take one example. The word for sinew is pronounced by the men *rat-tet*, by the women *ze-zet*.

The chronology of the Chukchi is very simple; it does not exist. They do not count the years, so nobody knows his own age. They have, however, a word for "a year" and names for the different seasons and for the full-moons, of which usually 13 occur in one year. To enumerate the 13 months, the Chukchi count them on the 12 joints on both arms from the finger-tips to the shoulders, including the head for the thirteenth month.

Their social organization is almost as simple as their chronology. The Russian officials used to appoint one or two chiefs, whose main duty seemed to be to reconcile parties who were at odds. These chiefs had, however, very little to do, because the Chukchi really are governed by the unwritten laws of public opinion. These laws require in the first place, respect for old age, and forbearance towards the weak and poor. But they also open full opportunity for the young and hot-tempered to fight out their controversies. To fight an old man is regarded as one of the worst crimes. It is also regarded as unworthy of a man to beat a woman, unless she happens to be his wife.

The women are, however, generally well treated. The marriages are usually settled by the parents when the children are five or six years old, and a small number of reindeer is paid for the girl. She moves over to the tent of her future husband at the age of ten or twelve, but may have to return to her home if she is not able to get along with her mother-in-law. Single marriages are most common, but a few men have two or even three wives.

The Chukchi are accustomed to kill the old people. This is, however, no act of cruelty, but an act of mercy. When an old man becomes ill and is unable to leave the tent any more, than life becomes a burden to him and he a burden to his surroundings. He asks to be killed, and his son renders him the last service by stabbing him in the heart. The custom is barbaric, but the way in which the Chukchi treat their dead is still more barbaric.

The body is taken out to a lonely place where the ground is uncovered, and an oblong of large stones, with its axis in a southeast to northwest direction is made on the ground. The body is placed in this oblong with the head toward the northwest—towards the darkness,

and then the limbs are cut over at all joints up to the knee and elbow joint, the head separated, and several deep cuts made in the body. This is then covered with fresh deer meat. The dead has to have his sledge, ax, knife, tobacco pipe, and tea-cup with him. On the next day, the reindeer herd is taken to the burial place, a number of deer are killed, and their antlers gathered into a large heap northwest of the burial place. This ceremony is repeated usually three times at intervals of one year. Later, the relatives of the dead one will sacrifice a piece of meat or what they may have at hand, if they pass the burial place. If the dead one has expressed a particular wish for it, his body may be burned.

The religion of the Chukchi seems to be two fold. They have themselves no idols, but they keep a number of idols for the reindeer. Thus, the fire drills used in former times for starting a fire are regarded as some of the reindeer's idols. All ceremonies in which these idols play a part seem intended only to guard the reindeer from the dangers which surround them. Other ceremonies aim to guard the Chukchi themselves. They aim to keep away the evil spirits living in the Earth, or to reconcile them, and to seek help from the Sun, which seems to represent the good powers. In addition, the Chukchi pay attention to an endless series of small matters; their superstition is unlimited.

Their conception of the soul or mind is animistic. The soul develops with the body; an old man is highly estimated because his soul is great. At death, the soul separates from the body and goes to the northwest, where it lives a kind of shadow life. It can, however, communicate with the living, and the Chukchi believe that dogs act as links between the living and the dead.

Generally, the Chukchi are perfectly content with their existence; they have no desire to leave their country or change their habits. They do not care for the outside world, as long as this outside world is willing to bring tea and tobacco in exchange for fox-skins. Civilization would not bring them any good, so it would be well if they might remain as primitive as they are.

PROCEEDINGS OF THE ACADEMY AND AFFILIATED SOCIETIES

ENTOMOLOGICAL SOCIETY

338TH MEETING

The 338th regular meeting of the Society was held March 3, 1921, in Room 43 of the new building of the National Museum with President WALTON presiding and 28 members and 5 visitors present. New Members: WM. C. RICHARDSON, Richmond, Virginia; CHAS. C. HILL, Bureau of Entomology Laboratory, Carlisle, Pennsylvania.

Program

R. E. SNODGRASS: *Life-history of the resplendent shield-bearer of apple and of ribbed cocoon maker.*

Altogether popular in form this paper contained much of interest, being based on studies of the insect made in connection with the beautiful drawings with which the paper was illustrated. It was prepared for publication in the Annual Report of the Smithsonian Institution.

Notes and exhibition of specimens

Dr. DIMITRI BORODIN, the noted Russian Entomologist, was introduced to the society by Dr. HOWARD. Dr. BORODIN addressed the Society briefly in English and in Russian.

Mr. E. H. GIBSON called attention to a posthumous paper by the late OTTO HEIDEMAN, which was omitted from the bibliography of Mr. HEIDEMANN published in the Proceedings of this Society. This paper, *The Rhynchota of the Isle of Pines*, was published in 1917 in the Annals of the Carnegie Museum

Mr. WM. MIDDLETON announced the discovery by himself that the males of the sayfly genus *Xyela* belong to the group Stropandria, that is the genitalia are inverted. In this respect it differs from its nearest relatives.

Messrs. H. S. BARBER and H. E. EWING discussed the past history and recent finding of insects of the primitive order protura, the latter recounting in some detail the characteristics and affinities of the group.

Mr. E. R. SASSCER referred to the condition of French fruit and rose stocks which have arrived in the United States since January 1, 1921. He stated that in that period eighty-five nests of the Brown-Tail Moth had been taken in thirty-two shipments, in contrast with sixty-three infested French shipments which have arrived in this country during the last nine years. The finding of so many nests in such a brief period indicates that the French inspection service is much below the standard of previous years, and to meet this situation, all French shipments of rose and fruit stocks are now being fumigated at the port of entry under the direction of the Department of Agriculture, as well as inspected at destination by state inspectors. He further stated that a warning had been sent to the French nurserymen and French inspection service to the effect that if shipments continue to arrive infested with nests of this injurious insect, it may be necessary to cancel all existing permits to import French stocks.

Interceptions have been made by the state inspectors of Connecticut New York, Indiana, Iowa, New Jersey, North Carolina, Pennsylvania,

Maryland, and Federal Inspectors in New York City, Philadelphia, and Washington, D. C.

He also stated that these French shipments were found to carry a number of nests of the so-called White Tree Pierid, *Aporia crataegi* L.

Mr. A. B. GAHAN stated that owing to misdeterminations the insects hiterto known as *Thyreodon morio* (Fab.) and *Exochilum mundum* (Say) will have to be called *Thyreodon atricolor* (Oliver) and *Therion morio* (Fab.), respectively.

Dr. A. G. BÖVING discussed the larval structures of the rice water weevil, *Lissorhoptrus simplex*. In some respects, especially in the form of the spiracles which are forced into the air chamber of the rice stem, this larva is similar to that of *Donacia*. In most resects, however, it is like the other curculionids.

Mr. J. A. HYSLOP called attention to the recent death of Dr. CHARLES H. FERNALD, for many years head of the department of entomology at the Massachusetts Agricultural College.

339TH MEETING

The 339th regular meeting of the Society was held on April 7, 1921, in Room 43 of the new building of the National Museum, with President WALTON in the chair and 23 members and 5 visitors present. New Members: C. D. B. GARRETT, Cranbrook, British Columbia; Dr. W. R. THOMPSON, Villa Pina Flor, Auch, Gers, France.

Corresponding Secretary ROHWER announced that by action of the Executive Committee the Society is furnishing the Proceedings to foreign institutions already subscribing, which cannot afford to subscribe at the present rate of exchange, at the rate of exchange of 1914. Dr. WALTHER HORN of the Berlin Entomological Museum had taken advantage of this offer and in accepting it had also sent as a gift to the Society a set of photographs, many in duplicate, of European Entomologists. These were exhibited by Mr. ROHWER. Such of these as are not already in the voluminous collection of Dr. HOWARD are to be added to that collection and the others offered for sale.

Program

AUGUST BUSCK and CARL HEINRICH: *On the Male Genitalia of the Microlepidoptera and their systematic Importance.*

This paper showed how the different forms assumed by the various elements of the genitalia furnish the best characters for the classification and recognition of insects of this group. It was illustrated by many photographic lantern slides taken from the slide mounts of genitalia.

Mr. BUSCK also spoke of the finding in swarms by Mr. SCHWARZ at Plummer's Island, Maryland of the hitherto rare moth, *Ethmia macelhosiella* Busck, and the subsequent discovery of its host relations and life-history. These swarms were first observed by Mr. Schwarz on November 8, 1916, and in the following spring larvae found feeding on *Phacelia* developed into adults of this species. The larvae reach full growth early in May, pupate in bark, and emerge as adult moths late in the fall. The time and place of oviposition is not known.

In the discussion of the last Mr. E. A. SCHWARZ spoke of the somewhat

similar seasonal history of the weevil, *Dorytomus inaequalis*, the larvae of which feed in the catkins of cottonwood.

S. A. ROHWER: *Injurious and Beneficial Cynipid Galls.*

Mr. ROHWER discussed the various types of galls with especial reference to their relation to human welfare, and told of their use in the arts and of the investigations conducted during the war into the possible substitution of American galls for the ordinary galls of commerce. Lantern slides of many galls were shown.

Dr. A. D. HOPKINS spoke of a gall with deciduous grain-like cells which are much eaten by poultry and which analysis shows are much more nutritious than wheat. It is known as "black oak wheat."

340TH MEETING

The 340th regular meeting of the Society was held May 5, 1921, in Room 43 of the new building of the National Museum, with President WALTON presiding and 20 members and 1 visitor present. New members: PEREZ SIMMONS, Bureau of Entomology, Washington, D. C.

Program

A. B. GAHAN: *Phytophagous Chalcids.*

This was a list compiled from literature, of the phytophagous Chalcidoidea, not including the fig insects, and discussion of the probable evolution of the phytophagic habit.

The speaker showed that phytophagy was now said to occur in six different families of chalcid-flies, *viz.*, Agaonidae, Callimomidae, Eurytomidae, Encyrtidae, and Eulophidae. Seed Chalcids and joint-worm flies are not the only phytophagic forms. Certain species are definitely stated to be gall-makers and others are said to bore in plant tissue much as do certain Coleoptera, Diptera, and Lepidoptera. The list of food plants is a varied one embracing such widely separated botanical groups as Leguminoceae, Pomaceae, and coniferous trees. Many species are distinctly economic.

Not only are the phytophagous forms distributed through several families but in many cases they apparently do not offer even minor group characters by which they may be separated from parasitic forms. Phytophagous species of the genus Eurytoma can be separated specifically only with great difficulty from those known to be parasitic. Several other genera contain both plant feeding and parasitic forms. The phytophagous species belong almost exclusively to groups in which a large percentage of the related parasitic forms breed in host larvae which are concealed in plant tissue, as for example, gall-makers.

The speaker stated that the ancestors of the Chalcidoids were undoubtedly plant feeders and that parasitism was a subsequent development. Unless one believed that they arose from a source entirely separate from that of other insects and at a later date it is impossible to conceive of their always having been parasitic. Phytophagy as found in the group today, however, is believed to be a comparatively recent specialization. That this is probably true is demonstrated by the fact that although the Chalcidoids are apparently a plastic group exhibiting very numerous and slightly specialized forms, phytophagy is not confined to any particular group or groups but occurs sporadically throughout the whole superfamily. If phytophagy had long existed it is to be expected that it would have resulted in structural differen-

tiations between the forms so living and those which are parasitic. The most important indication of the probable recent development of the phytophagic habit, however, is found in the assertion by three different authors that certain species of Eurytomidae are parasitic in their earlier stages but finish their development as plant feeders. Such a mode of development would seem to leave little room for doubt that phytophagy as found at present is a recent specialization.

Notes and exhibition of specimens

Mr. L. H. WELD told in some detail of the collection of Cynipidae in the National Museum, its content and present arrangement. He stated that there are probably more Cynipidae in this museum than in any other institution.

Mr. S. A. ROHWER discussed the collection for the other groups of the Hymenoptera. He announced that the collection of bees had recently been completely rearranged, that the Serphoids were now being assembled and arranged; that the rearrangement of the sawflies was completed in 1911 but that since then much new material had been received; that the Chalcidoids were gradually being put in good order; and that in general the arrangement of the collection had been greatly improved in the last few years. He added there is still a very great deal to be done but that he believed the National Collection of Hymenoptera was probably more extensive than that of any other institution in the groups usually considered to be of economic importance. He pointed out that the material in the collection was in a large measure secured by the cooperation of the economic entomologists of the world and that because of this it represented much biological material and notes and that in this feature it was probably more complete than any of the large collections of other countries.

Mr. E. A. SCHWARZ spoke of four European species of *Carabus* that had been introduced into New England along with the *Calosoma* beetles. One of these, *nemoralis*, has now spread as far as New Jersey, while *auratus* has bred and spread more sparingly. The other two have apparently failed to establish themselves.

Dr. A. G. BÖVING stated that the National Museum collection of Coleopterous larvae is by far the largest in the world.

R. A. CUSHMAN, *Recording Secretary.*

SCIENTIFIC NOTES AND NEWS

For the purpose of encouraging research work on glass the Research Committee of the Glass Division of the American Ceramic Society has made arrangements for providing glass of desired composition and desired form for investigators in this field. The material will be supplied free of charge and no limitations as to the nature of the research will be imposed. The recipients of the material will be under no obligations except that of publication of the results of their investigations. The committee, however, requests that wherever possible the Journal of the American Ceramic Society be given preference in reporting the results. Persons who are interested are requested to address their inquiries to one of the following members of the Committee on Research: E. C. SULLIVAN, Corning Glass Works, Corning, New York; E. W. WASHBURN, University of Illinois, Urbana, Illinois; R. B. SOSMAN, Geophysical Laboratory, Washington, D. C.

The Academy of Science and Arts of Trieste, Italy proposes to issue an encyclopedia of science and arts, under the editorship of Prof. GIORGIO GIUSEPPE RAVASINI DA BUÏE, of Istria. An advance notice states that the publication, which will appear in 16-page fascicles, will contain twice as many articles as the Encyclopaedia Britannica.

The Petrologists' Club met on March 14, with the following program: L. LA FORGE, *Magmatic differentiation as illustrated by the Dedham granitic group in eastern Massachusetts;* M. N. BRAMLETTE: Review of Gordon's *Desilicated granitic pegmatites;* E. S. LARSEN, informal communication on *Crystallization and resorption in magmas.*

Two small lots of bird skins presented to the National Museum by B. H. SWALES, Honorary Assistant Curator, Division of Birds, contain 8 genera and many species previously unrepresented in the collection.

The Section of Vertebrate Paleontology of the National Museum has recently acquired portions of the skin, hair, muscular tissue, dried fat and blood of the Siberian Mammoth, which, with other specimens, now form an exhibit illustrative of this animal. The specimens are from a carcass that was found frozen in a cliff along the Beresovka River in northeastern Siberia in 1901, and was exhumed for the Imperial Academy of Science in Petrograd by a Russian naturalist, now a refugee in Germany. The patch of skin measuring one by two feet is from the knee of the right hind leg. It is thickly covered with a short wooly hair and with bunches of long reddish hair that varies in length from 4 to 6 inches. A bunch of hair taken from the right shoulder has a length of more than 30 inches.

The Division of Mollusks of the National Museum has recently received from Dr. E. M. BLUESTONE, Assistant Director of the Mount Sinai Hospital, New York City, a series of 187 slides showing the different species of malarial parasites. In some instances specimens were taken at stated intervals between chills, to show the different stages in the development of the Trophozoite in the blood of man.

The grass herbarium has received a package of Brazilian grasses from the Berlin Herbarium containing a number of duplicate types collected by Sello and described by Nees von Esenbeck in his account of the grasses of Brazil published in 1829. A fine set of Argentine grasses has also been received from Dr. LORENZO PARODI, of Buenos Aires.

The Section of Photography of the National Museum has recently purchased a set of 75 representative photographs of snow crystals made by W. A. BENTLY, of Jericho, Vermont, who has been studying snow crystals for more than thirty years.

Dr. JOHN CASPER BRANNER, ex-president of Leland Stanford, Jr., University, California, and a non-resident member of the ACADEMY, died on March 1, 1922.

E. F. BURCHARD has taken leave for one year from the Geological Survey and has gone to Argentina for private interests.

MRS. AGNES CHASE of the Bureau of Plant Industry sailed March 11 for Europe to study the types of grasses in the larger herbaria. She goes first to Vienna to select a series of duplicates from the herbarium of the well-known agrostologist, Professor Hackel, and later will visit Florence, Berlin, Geneva, Paris, Brussels, Leyden, and London. Mrs. Chase expects to return about the first of July.

Prof. ARNOLD VAN JENNEP, eminent French anthropologist, was a recent visitor in the Division of American Archeology. Professor van Jennep

visited several sites of current investigation during his extensive journeys throughout the United States and is now on his way back to France.

F. J. KATZ, who has been with the Census Bureau for several years, has returned to the Geological Survey and will be assistant chief of the Mineral Resources Section.

Mr. A. S. LE SOUEF, director of the Zoological Gardens at Sydney, Australia, was a recent visitor at the Zoological Park. Mr. Le Souef took to Europe from Australia the first shipment of live animals sent abroad by the new Zoological Control Board of Australia, which now has complete charge of the exportation of Australian animals.

Dr. WILLIAM M. MANN, of the Division of Insects, who has been since last June with the Mulford Biological Exploration in eastern Bolivia and western Brazil, writes from Riberalta, Bolivia, under date of January 12, that the expedition will return to the United States early in April. Dr. RUSBY, the director, has recently been compelled to return on account of ill health. Dr. Mann is now in charge of the party.

Dr. MORTON P. PORSILD, of the Danish Arctic Station, Disko, Greenland, recently spent a day or two in study of the Alaskan collections of the National Herbarium.

T. W. VAUGHAN has at his request been relieved of administrative duties as Chief of the Coastal Plain Section in the Geological Survey, and L. W. STEPHENSON has been assigned these duties. W. P. WOODRING has been appointed Chief of the Section of West Indian geologic surveys in the Coastal Plain Section.

Dr. CHARLES W. WAIDNER, chief physicist of the Bureau of Standards, died on March 10, 1922 at his home, 1748 Lanier Place, after a long illness. Dr. Waidner was born in Baltimore, Maryland, on March 6, 1873. After graduating at Johns Hopkins University he acted as instructor both there and at Williams College. He was appointed to the Bureau of Standards in 1901 and made chief physicist in 1921 after the death of Dr. E. B. ROSA. Dr. Waidner's name is generally identified with his work on the high temperature scale, on radiation and on the resistance thermometer. More recently the other end of the temperature scale had also engaged his attention, to the advantage of our knowledge of refrigerating processes. During the war he had charge of the Bureau's work on aviation engines. He was a member of the ACADEMY and of the Philosophical Society, as well as of many national and international scientific bodies.

Dr. T. T. WATERMAN, lately appointed ethnologist of the Bureau of American Ethnology, has left for field-work in Alaska, Oregon, and Washington. He will first proceed to the Kasaan National Monument, Alaska, to study the architecture, totem poles and other objects at this village and will be accompanied by a half-breed Haida, related by marriage to Chief Skoul. It is expected that considerable legendary data bearing on history and sociology of the former inhabitants of Kasaan will also be collected. Should the results justify further work it is planned to continue field-work on place names and aboriginal village sites of Alaska to be followed later by work on stratigraphic archeology in more northern latitudes in order to discover if possible traces of the oldest Indians in this supposed prehistoric gateway of the migration of man into North America.